

Table 1

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| European vehicle | left / right femur-force of driver | left / right femur-force of co-driver | belt-force of driver / co-driver | U _H |
|----------------------|------------------------------------|---------------------------------------|----------------------------------|----------------|
| F1 | 15190 N | nR N | 5620 / 6100 N | 20 / 80° |
| F2 | 2258 / 2700 | 1381 / 2315 | 7030 / 7310 | 25 / 90 |
| F3 | 2785 | 1587 | 5142 / 5655 | 45 / 70 |
| F4 | 3700 | 2300 | nR / 6800 | 10 / 45 |
| F5 | 2340 | 1630 | 6040 / 7050 | 50 / 50 |
| F6 | 6858 | 2362 | 6015 / 6685 | 20 / 30 |
| F7 without airbag | 1480 | 2140 | 8220 / 8380 | / |
| F8 | 1600 | 2100 | 3400 / 4700 | 20 / 40 |
| F9 | 700 / 1200 | 1500 / 1100 | 6900 / 8400 | 25 / 50 |
| F10 | 2750 | 2180 | 6580 / 6160 | nR / 40 |
| F11 | 1400 / 1200 | 900 / 1300 | 3600 / 3400 | 10 / 30 |
| F12 | 2200 / 1700 | 1200 / 900 | 3000 / 3800 | 5 / 30 |
| F13 | 2360 | 2610 | 9130 / 8510 | 40 / 50 |
| F14 | 1300 / 1400 | 1300 / 900 | 8300 / 4400 | 0 / 10 |
| F15 | 5100 / 1700 | 800 / 4400 | 3300 / 3700 | 0 / 40 |
| F16 | nR / 8300 | 2733 / 3980 | 6144 / 5415 | 5 / 85 |
| F17 | 2037 / 11206 | 1323 / 1418 | 6829 / 7885 | 5 / 90 |
| F18 | 4100 | 4700 | 5300 / 6400 | 60 / 30 |
| F19 | 2300 | 2600 | 6500 / 5700 | 35 / 70 |

nR = no result

Table 2

| | yaw O of driver / co-driver |
|-----|-----------------------------|
| F20 | 85 / 90° |
| F21 | 100 / nR |

Table 3

| | force of head | acceleration of head | acceleration of chest | force of neck | forward motion |
|-------------------|---------------|----------------------|-----------------------|---------------|----------------|
| child-seat | 696 HIC | 65 g | 59 g | 1516 N | 552 mm |
| F11 | 229 | 38 | 40 | | |
| child-seat to F11 | 304 % | 171 % | 148 % | | |

Table 1

1/9

| | left / right femur-force of driver | left / right femur-force of co-driver | belt-force of driver / co- driver | U _H |
|-------------------------|--|---|---|----------------------|
| Fiat Tipo® | 15190 N | nR N | 5620 / 6100 N | 20 / 80 ⁰ |
| Opel Corsa® | 2258 / 2700 | 1381 / 2315 | 7030 / 7310 | 25 / 90 |
| VW Polo® | 2785 | 1587 | 5142 / 5655 | 45 / 70 |
| Fiat Bravo® | 3700 | 2300 | nR / 6800 | 10 / 45 |
| VW Golf® | 2340 | 1630 | 6040 / 7050 | 50 / 50 |
| MB C® | 6858 | 2362 | 6015 / 6685 | 20 / 30 |
| MB E200® ohne Airbag | 1480 | 2140 | 8220 / 8380 | / |
| VW Passat® | 1600 | 2100 | 3400 / 4700 | 20 / 40 |
| AUDI A6® | 700 / 1200 | 1500 / 1100 | 6900 / 8400 | 25 / 50 |
| Opel Omega® | 2750 | 2180 | 6580 / 6160 | nR / 40 |
| BMW 528i® | 1400 / 1200 | 900 / 1300 | 3600 / 3400 | 10 / 30 |
| MB E320® | 2200 / 1700 | 1200 / 900 | 3000 / 3800 | 5 / 30 |
| AUDI A8® | 2360 | 2610 | 9130 / 8510 | 40 / 50 |
| BMW Z3® | 1300 / 1400 | 1300 / 900 | 8300 / 4400 | 0 / 10 |
| MB SLK® | 5100 / 1700 | 800 / 4400 | 3300 / 3700 | 0 / 40 |
| FB | nR / 8300 | 2733 / 3980 | 6144 / 5415 | 5 / 85 |
| Renault Espace® | 2037 / 11206 | 1323 / 1418 | 6829 / 7885 | 5 / 90 |
| Opel Sintra® | 4100 | 4700 | 5300 / 6400 | 60 / 30 |
| VW Sharan® | 2300 | 2600 | 6500 / 5700 | 35 / 70 |

FB = Peugeot 806®, Citroen Evasion®, Fiat Ulysse®, Lancia Zeta®

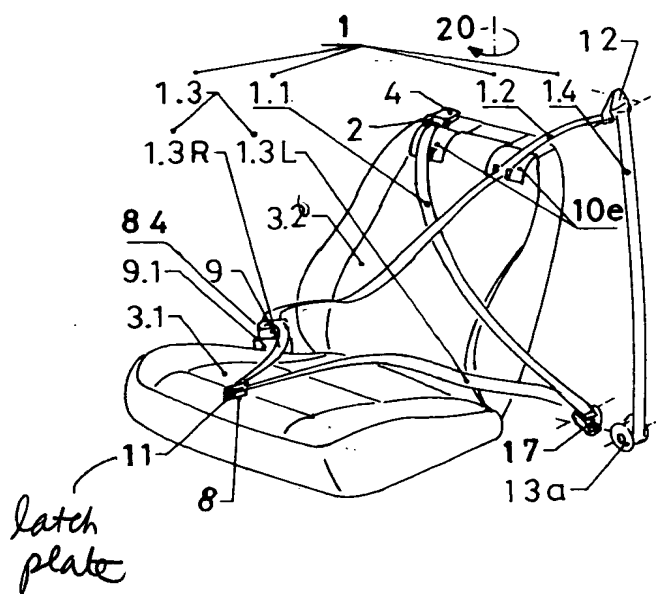
nR = no result

Table 2

| | yaw O of driver / co-driver |
|---------|--------------------------------|
| BMW Z3® | 85 / 90 ⁰ |
| MB SLK® | 100 / nR |

Table 3

| | force of head | acceleration of head | acceleration of chest | force of neck | forward motion |
|---------------------------|------------------|-------------------------|--------------------------|------------------|-------------------|
| child-seat | 696 HIC | 65 g | 59 g | 1516 N | 552 mm |
| AUDI A4® | 392 | 49 | 45 | | |
| MB E320® | 229 | 38 | 40 | | |
| child-seat to MB E320® | 304 % | 171 % | 148 % | | |

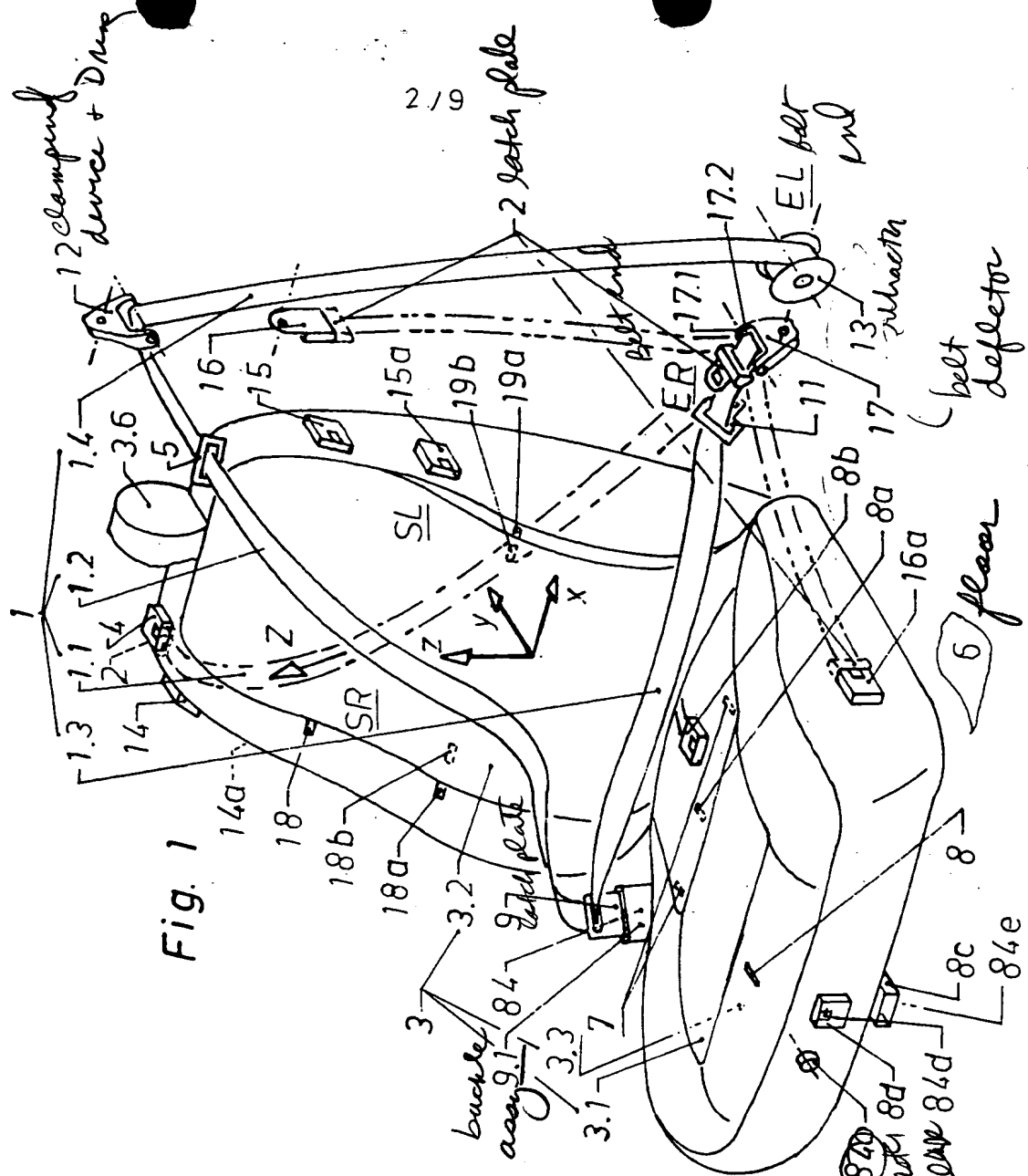


| Author | Year | Country | Sample | Sample Size | Sample Age | Sample Gender | Sample Education | Sample Occupation | Sample Income | Sample Marital Status | Sample Religion | Sample Ethnicity | Sample Language | Sample Culture | Sample Values | Sample Attitudes | Sample Beliefs | Sample Opinions | Sample Behaviors | Sample Outcomes |
|---------|------|-------------|-------------|-------------|------------|---------------|------------------|-------------------|---------------|-----------------------|-----------------|------------------|-----------------|----------------|---------------|------------------|----------------|-----------------|------------------|-----------------|
| Smith | 2010 | USA | College | 100 | 18-25 | 50% | Bachelor's | Student | \$10,000 | Single | Christian | White | English | Western | Individualism | Materialism | Religiosity | Conservatism | Pro-environment | Pro-social |
| Johnson | 2012 | UK | University | 150 | 19-28 | 50% | Bachelor's | Student | \$15,000 | Single | Christian | White | English | Western | Individualism | Materialism | Religiosity | Conservatism | Pro-environment | Pro-social |
| Lee | 2015 | China | High School | 200 | 15-18 | 50% | High School | Student | \$5,000 | Single | Buddhist | Chinese | Mandarin | Eastern | Collectivism | Materialism | Religiosity | Conservatism | Pro-environment | Pro-social |
| Kim | 2018 | South Korea | University | 120 | 19-25 | 50% | Bachelor's | Student | \$12,000 | Single | Buddhist | Korean | Korean | Eastern | Collectivism | Materialism | Religiosity | Conservatism | Pro-environment | Pro-social |
| Nguyen | 2020 | Vietnam | University | 80 | 18-25 | 50% | Bachelor's | Student | \$8,000 | Single | Buddhist | Vietnamese | Vietnamese | Eastern | Collectivism | Materialism | Religiosity | Conservatism | Pro-environment | Pro-social |

The diagram shows a mechanical system. A horizontal arm of length \$D_H\$ is pivoted at its left end to a vertical support. The arm is at an angle \$\alpha\$ to the horizontal. At its right end, a block of mass \$m\$ is attached. The block can move vertically along a guide. The vertical distance from the pivot to the block is \$D_S\$. The block is at a height \$S_y\$ from the ground. The arm has a moment of inertia \$J_H\$ about the pivot. The block has a moment of inertia \$J_S\$ about its center of mass. The forces acting on the arm are \$F_{Sz}\$ (vertical force at pivot), \$F_{Hy}\$ (horizontal force at pivot), and \$F_{Hx}\$ (horizontal force at the block). The forces acting on the block are \$F_{Sy}\$ (vertical force at the block) and \$F_{Hy}\$ (horizontal force at the block). The angular displacement of the arm is \$\varphi\$, and the vertical displacement of the block is \$y\$. The diagram is labeled with 1.3, 95, and 96.

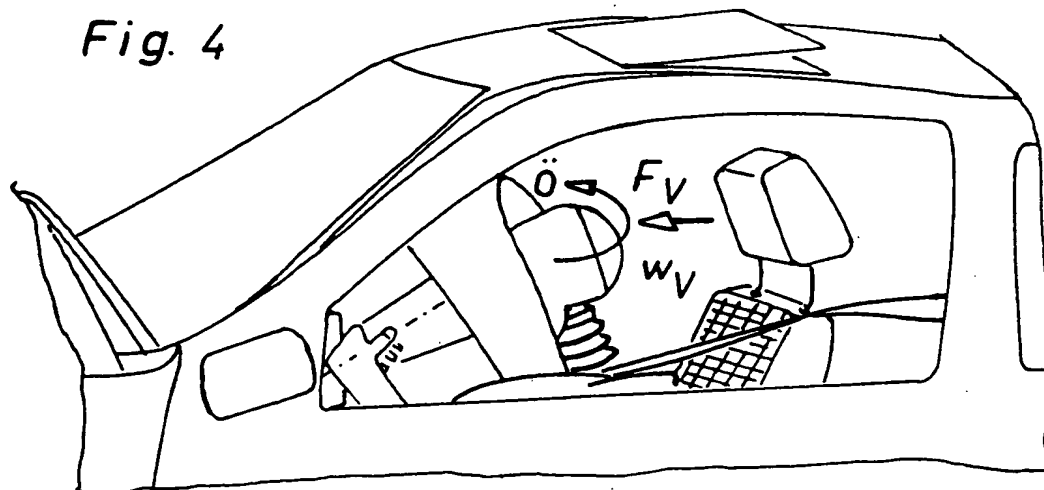


Fig. 2



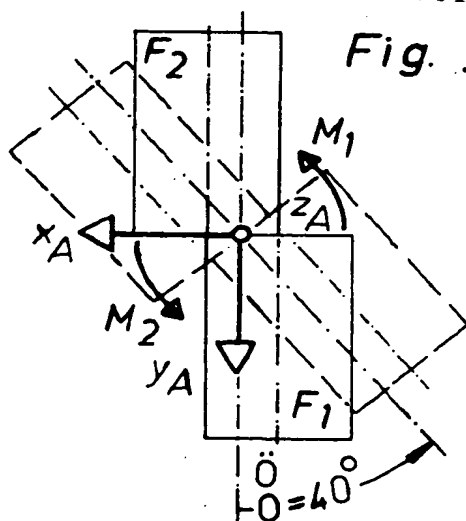
Prior Art

Fig. 4



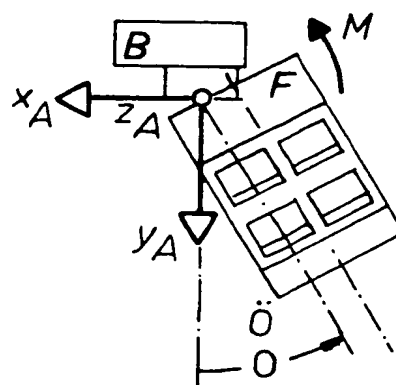
Prior Art

Fig. 5



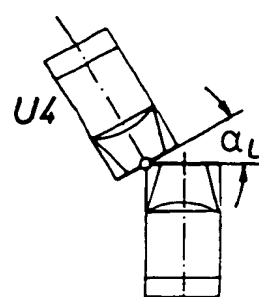
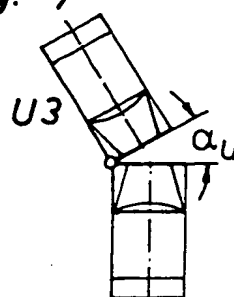
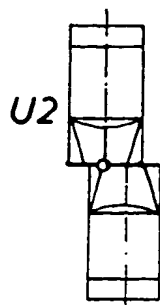
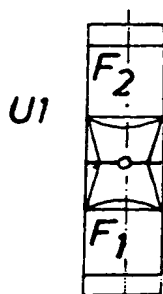
Prior Art .

Fig. 6



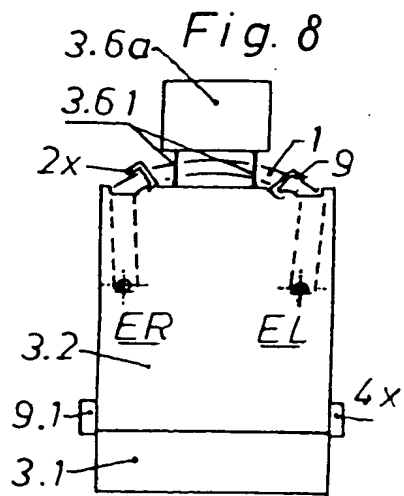
Prior Art

Fig. 7

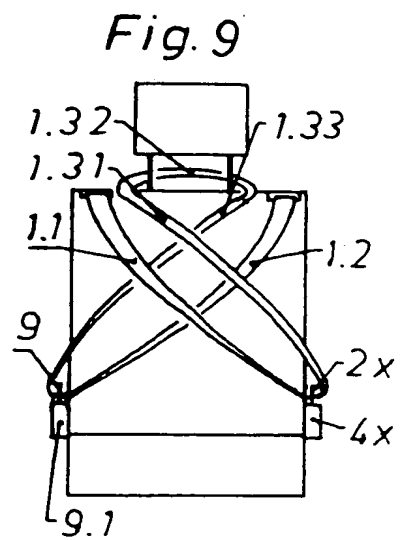


Prior Art

Prior Art



Prior Art



Prior Art

Fig. 10

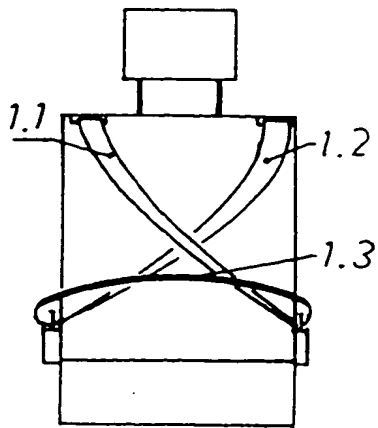


Fig. 11

Prior Art

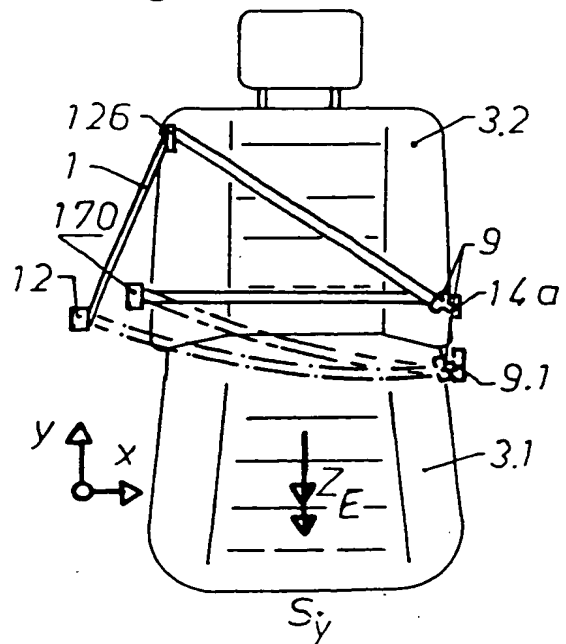


Fig. 12a

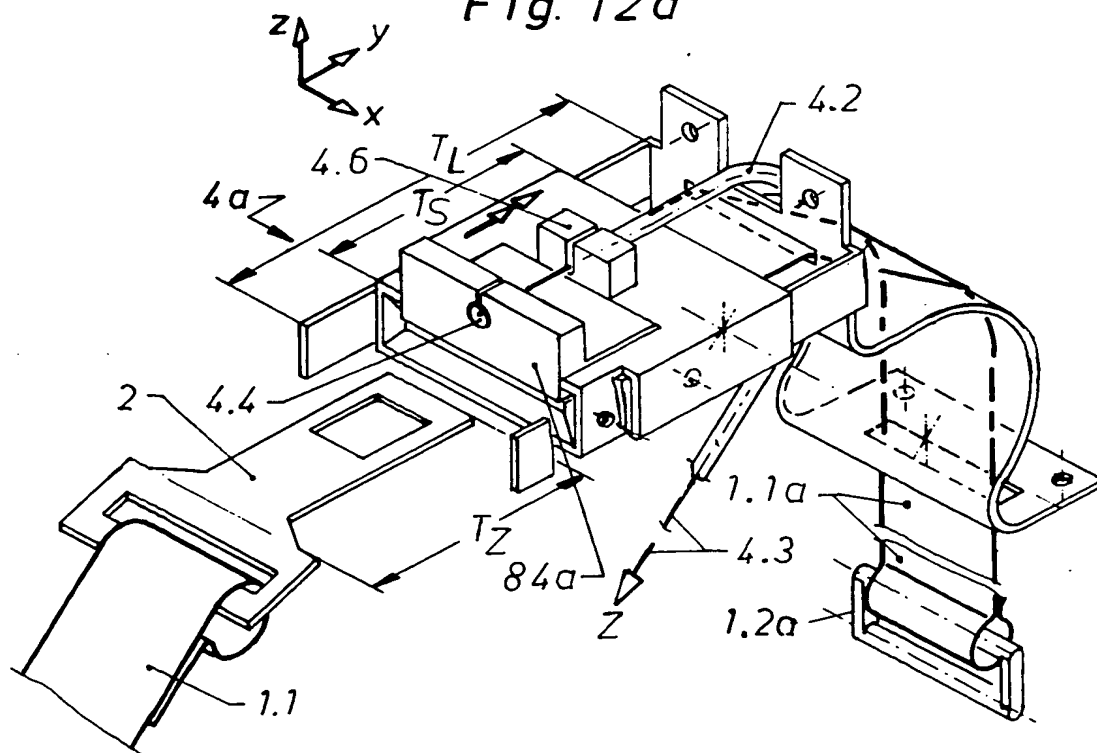
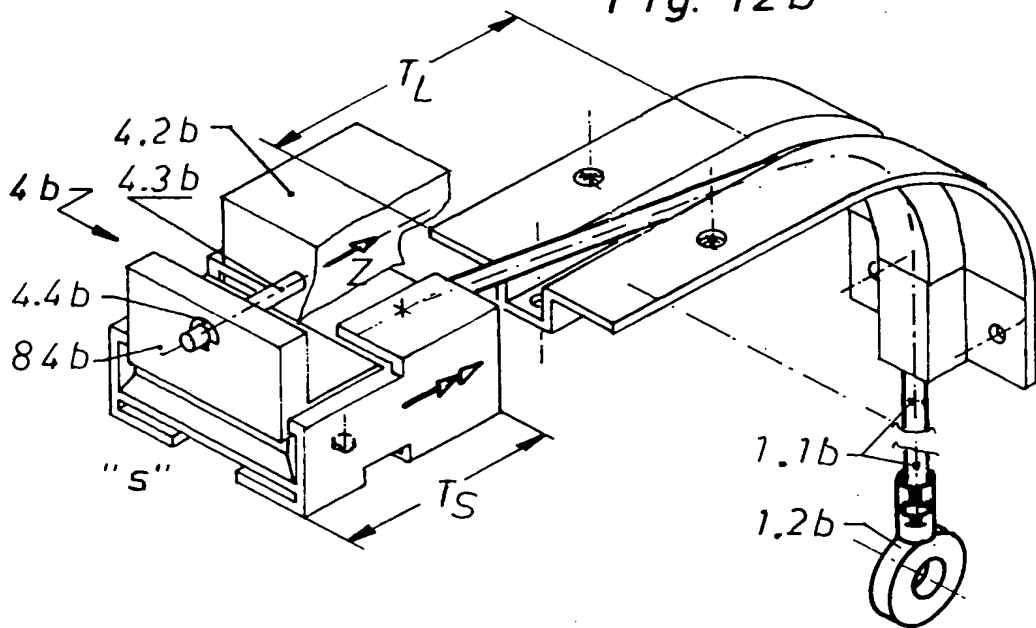


Fig. 12b



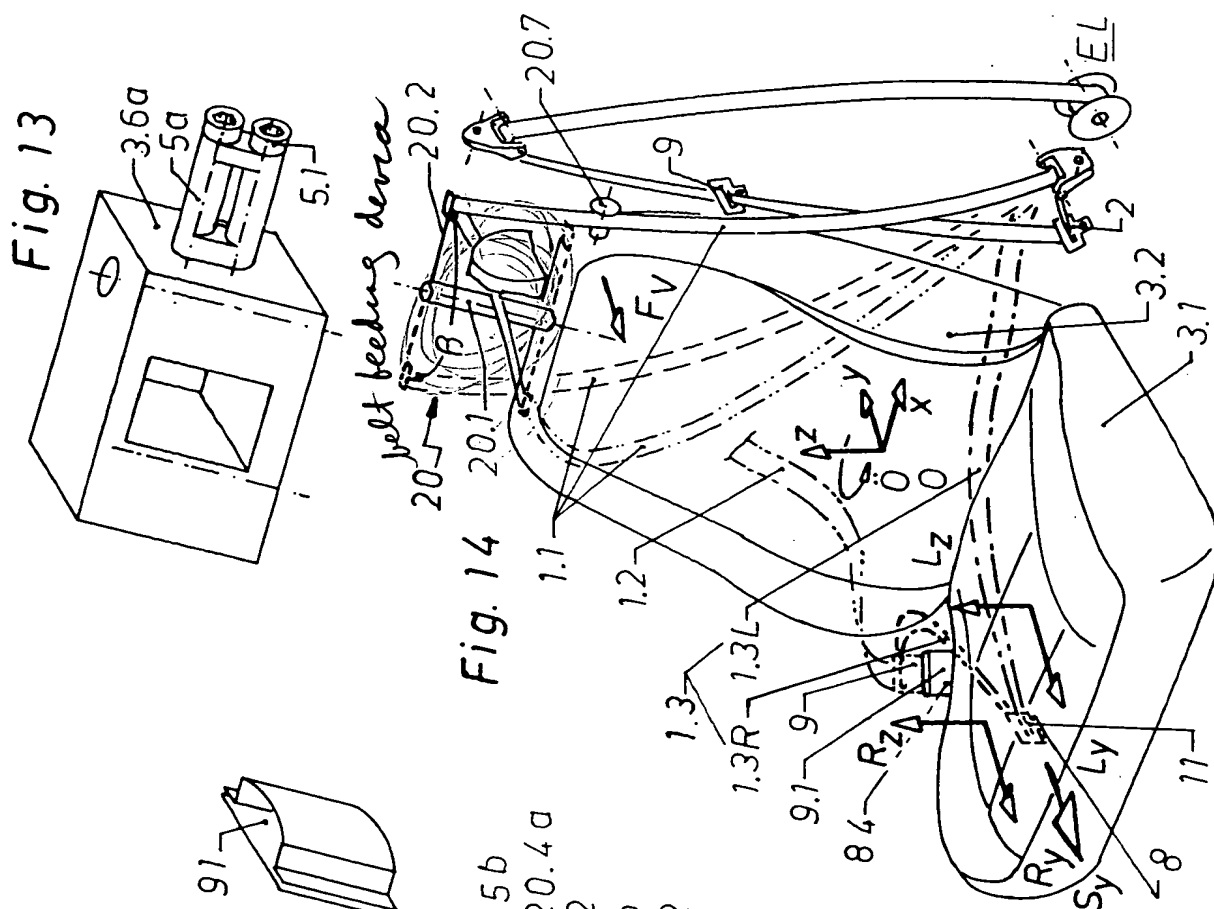


Fig. 15

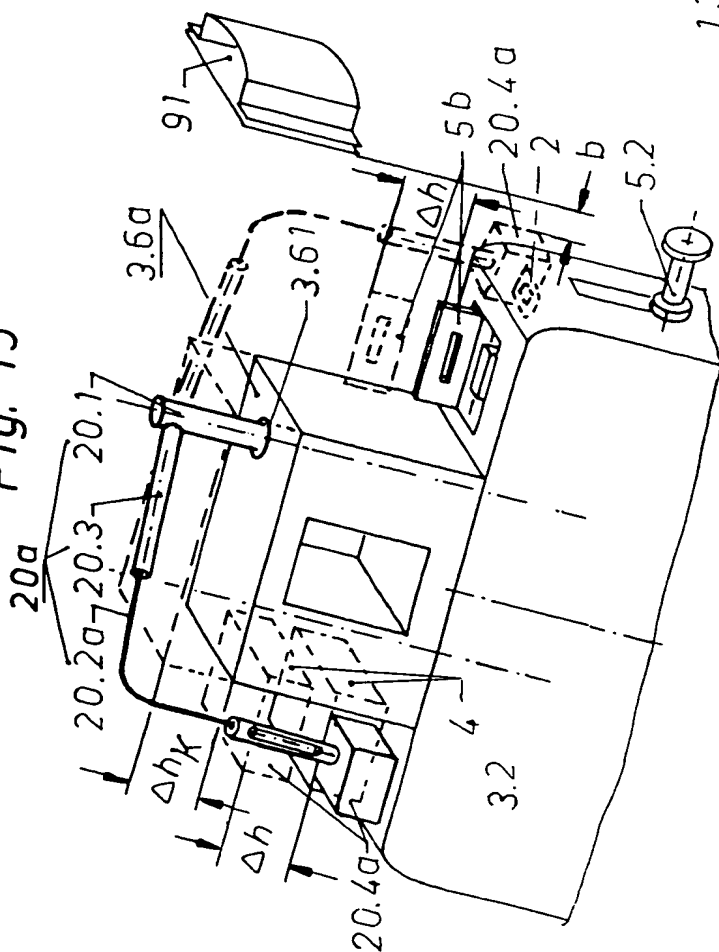
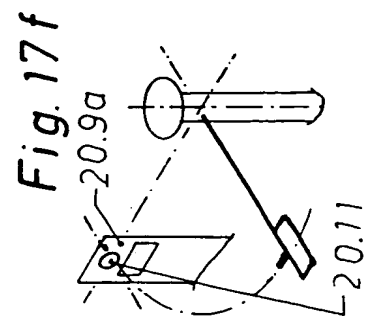
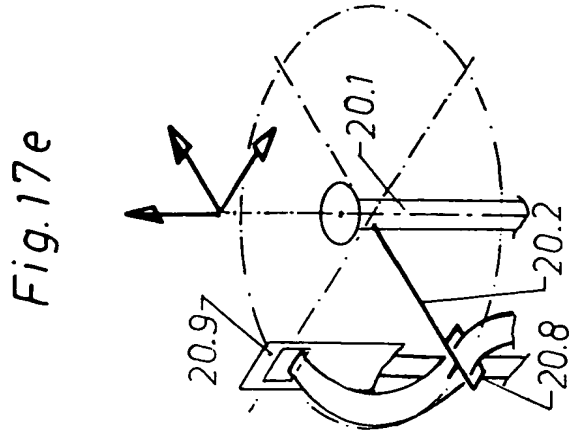
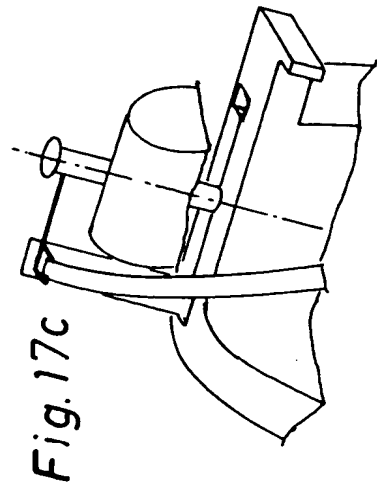
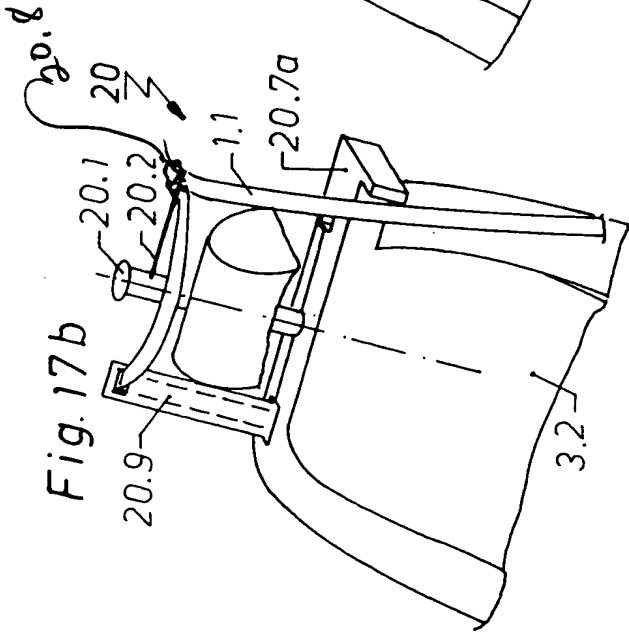
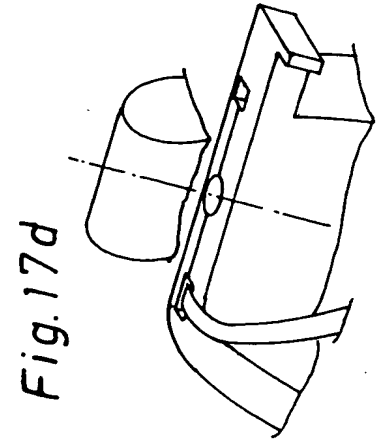
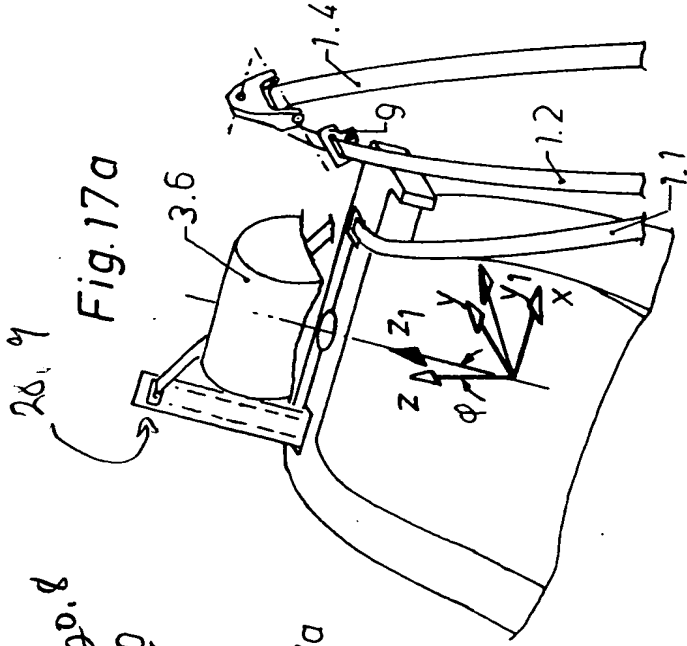


Fig. 16



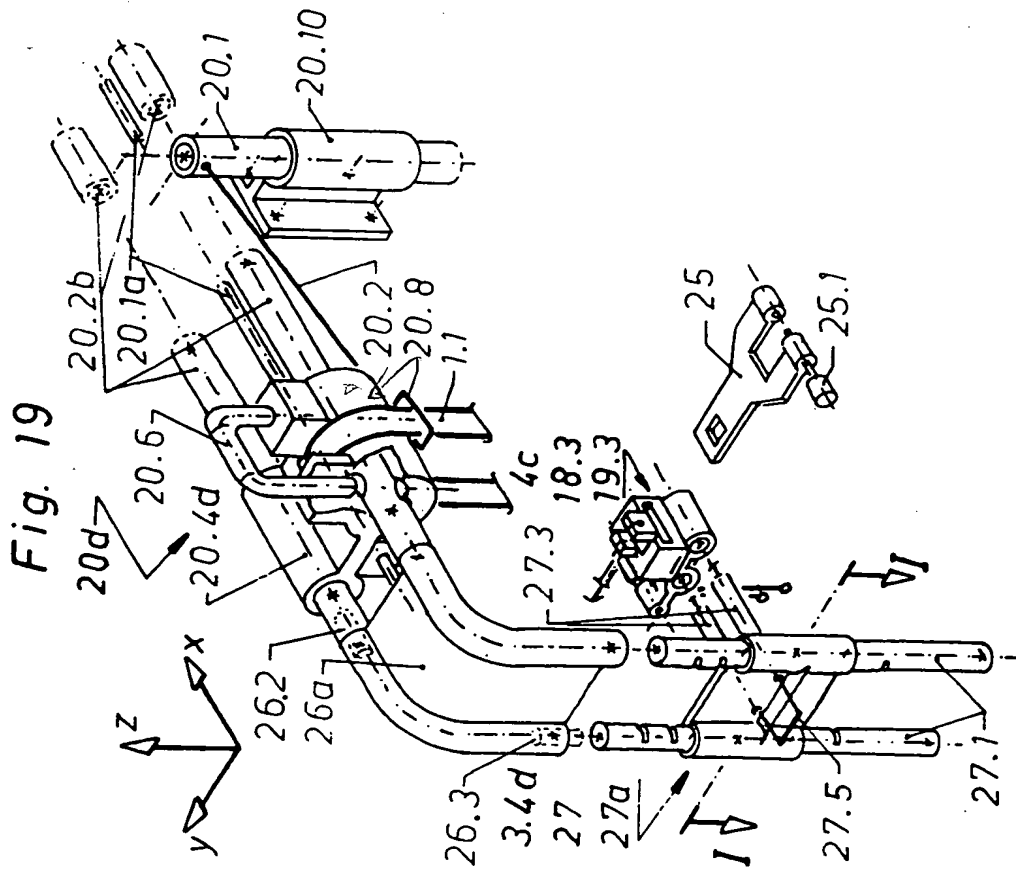
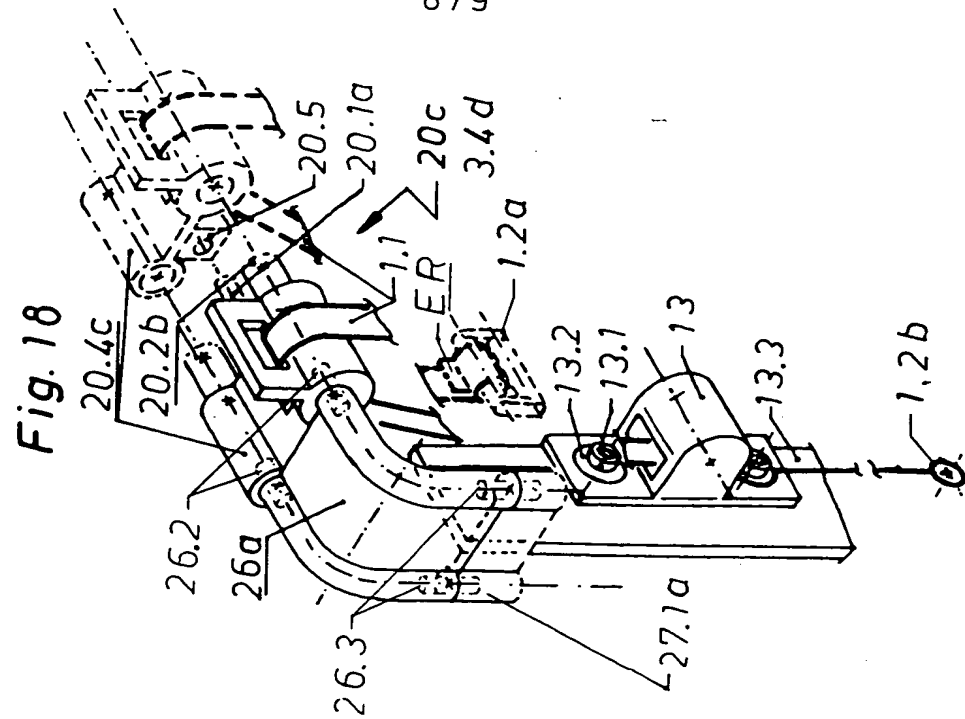


Fig. 20

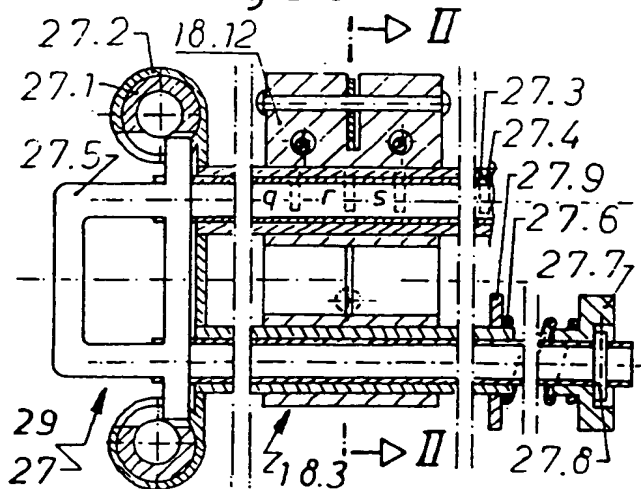


Fig. 21

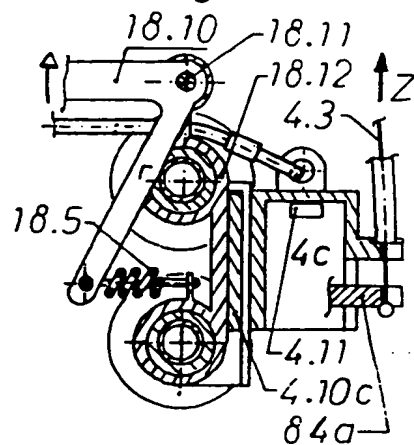


Fig. 22

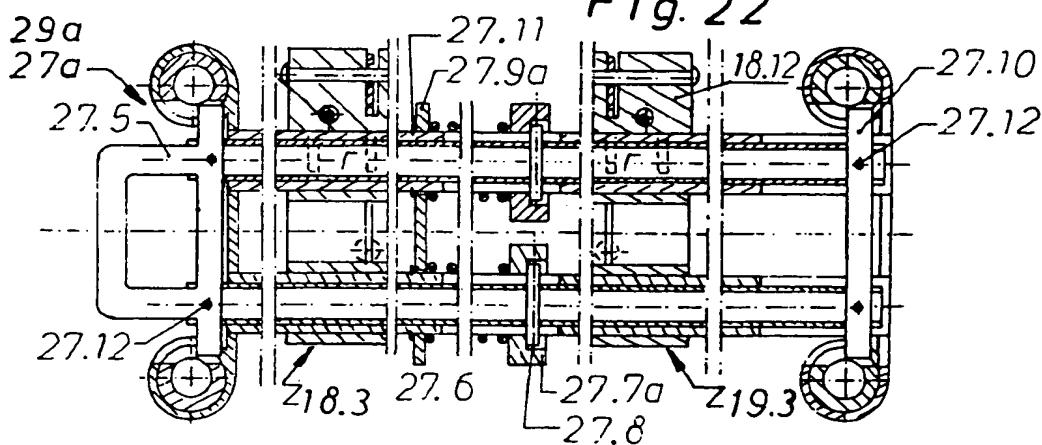


Fig. 23

